

**Commonwealth of Kentucky**  
**Division for Air Quality**  
***PERMIT STATEMENT OF BASIS***

Title V (draft permit) No. V-98-048

U.S. BRICK - SIPPLE DIVISION

STANTON, KY.

June 6, 2000

CHRISTY RICE, REVIEWER

Plant I.D. # 102-3380-0001

Application Log # F441

**SOURCE DESCRIPTION:**

U.S. Brick - Sipple Division operates a brick manufacturing plant at 2014 Morris Creek Road in Stanton, Kentucky. Clay is mined and stored on site. After the clay is crushed, screened and sized for manufacturing, it is mixed with sand (75% clay to 25% sand) in a pug mill while water is added. Bricks are formed through a die and cut operation. After cutting, the brick is dried and vitrified, employing two natural gas fired tunnel kilns.

The raw material handling equipment is enclosed in a large building and consists of a receiving hopper, grinder, two screens and three associated conveyors, installed in 1971, and a primary crusher, screen and conveyor, added in 1992. Fugitive particulate emissions are collected by hoods and vented to a large baghouse located outside the building.

Two natural gas fired tunnel dryer/kilns were installed in 1971 and 1980. Both were modified to burn coal in 1984 and 1985, however use of coal as a fuel was discontinued by 1992. Neither kiln is equipped with air pollution control equipment.

A brick crushing operation was added in 1996. Equipment includes a feed hopper, primary crusher, double screen, and conveyors. Fugitive particulate emissions are controlled by wet suppression.

**COMMENTS:**

Regulation 401 KAR 61:020, Existing process operations, is applicable to the raw material handling equipment installed in 1971. The primary crusher, conveyor, and screen added in 1992 are subject to Regulation 401 KAR 59:310, New nonmetallic mineral processing plants. The two natural gas fired tunnel kiln/dryers are subject to Regulation 401 KAR 59:010, New process operations, with respect to particulate emissions. Regulation 401 KAR 59:105, New process gas streams, does not apply since total potential emissions of sulfur dioxide are less than 100 tons per year.

Control of fugitive particulate matter from raw material handling is accomplished by collection of emissions by hoods and ducting to a baghouse. An efficiency of greater than ninety-nine percent is assumed for this type of control. Fugitive particulate emissions from the brick crushing operation are controlled by wet suppression with a control efficiency of ninety percent. Application of water to the haul road effects an estimated seventy percent reduction in fugitive emissions. No controls exist for the two dryer/kilns.

The sulfur dioxide emission factor was calculated from a mass balance equation based on a clay sulfur content of 0.037%. An emission factor for the haul road was calculated based on its length and surface characteristics. All other emission factors were taken from AP-42 Section 11.3, Brick and Structural Clay Product Manufacturing (8/97).

Hydrogen fluoride emissions from the two tunnel kilns exceed the major source threshold of 10 tons per year for any hazardous air pollutant (HAP). Section 112 of the Clean Air Act requires that the EPA promulgate regulations establishing emission standards for each category of major sources of HAPs. The standards must require the maximum degree of emission reduction that the EPA determines to be achievable by each particular source category. Promulgation of the maximum achievable control technology (MACT) standard for the Clay Products Manufacturing source category is scheduled for November, 2000. MACT standards must include compliance dates for existing sources no later than 3 years after promulgation. The EPA or the Division may grant individual sources a 1-year extension if necessary for the installation of controls.

**CREDIBLE EVIDENCE:**

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.